

First 3 Pages
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APPLICATION FOR A PERMIT TO CONSTRUCT
AND OPERATE TAILINGS PONDS
FOR THE TRIXIE MINE

1.0 INTRODUCTION

1.1 Summary

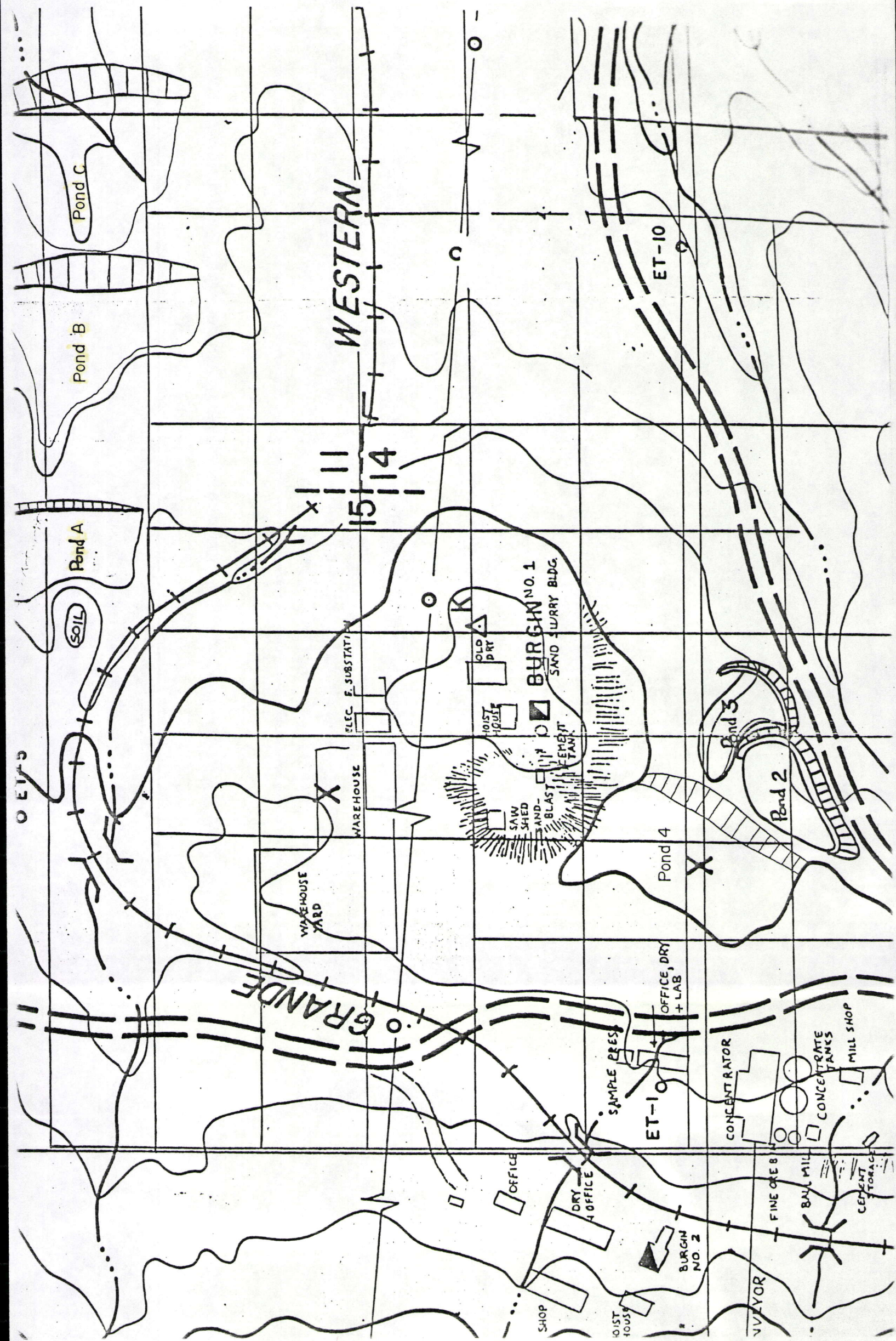
Sunshine Mining Company (SMC) of Boise, Idaho acquired a 12,000 acre mining lease from Kennecott Copper Corporation in Township 10 South, Range 2 West, SLBM, Utah County. The property consists of three underground mines (all temporarily shut down), one 800 ton-per-day flotation mill, surface shops, warehouses, offices, and various tailings and wastewater disposal ponds which were constructed and operated by Kennecott prior to 1978. Since SMC acquired the lease, it has been engaged in an exploration and development program to commence renewed production from the Burgin Mine. This effort was largely financed by the sale of ore from the Trixie Mine to the Kennecott Utah Copper Division smelter. Kennecott suspended operations at the smelter and SMC must now develop a new source of revenue at it's Eureka Division to continue work there.

SMC has evaluated the potential of milling the Trixie ore in the existing Burgin Mill. In order to conduct the necessary milling operations, SMC needs to develop a tailings disposal facility.

This proposed tailings disposal system will be located north and east of the existing concentrator in a small drainage system where no surface development exists or has existed. These ponds will be utilized if the current price of precious metals improves to a point where it will be economically feasible to concentrate ore containing gold and silver.

1.2 Location

The proposed operations are located in the East Tintic Mountains approximately 30 miles south-southwest of Provo in Utah County (Figure 1). The facilities affected by this proposal are located in the SE/4, Sec. 15, T. 10 S., R. 2 W., SLBM.



1.3 Site Description

The general layout of the site is shown in Figure 2. Ore will be milled in the existing concentrator. The tailings will be pumped to new impoundments located within 2500 feet of the concentrator. These impoundments are labeled Ponds A, B and C, (Figures 3-5) and will be constructed north-northeast of the concentrator. The ponds are on land controlled by SMC and are well over 1000 feet from the nearest present or future place of habitation.

Information included in a USGS report (Morris and Lovering, 1979) indicate that the ponds are immediately underlain by early Quaternary terrace gravels and alluvium which consists of poorly sorted fragments of volcanic rock in a sand and silt matrix. The bedrock consists of Tertiary quartz latite volcanics that are glassy and relatively unfractured in their upper sections. Immediately west of these proposed ponds, surface drill hole ET-5 (Figure 2) intersected 1912 feet of Tertiary volcanics before bottoming in Paleozoic limestones and dolomites (Appendix A).

The major groundwater table in the vicinity of the ponds is at a depth of approximately 1080 feet (Lovering and Morris, 1965). This water flows from the faulted and fractured sedimentary rocks that underlie the volcanics. Mine workings above this water table are relatively dry. Estimates by Lovering and Morris (1965) on the percolation rate through the volcanics indicate that about 5 percent of the total annual rainfall enters the volcanic section. The regional groundwater system beneath the site is anomalously hot (140°F) and contains over 6000 milligrams per liter of total dissolved solids.

Perched water tables are present in terrace gravels and alluvium about 1.4 miles southwest of the ponds and topographically higher than the ponds. There is no evidence of significant perched water in the gravels that underlie the ponds.

Proposed ponds A-C are situated in a small drainage system that enters the Silver Creek channel 3600 feet east of the lowermost proposed pond. This creek is perennial upstream of the ponds in the vicinity of some springs; but at the location of the ponds, the flow occurs only in response to snowmelt or runoff from storms. Samples of water from Silver Creek have been collected for complete chemical analysis (Appendix B).